

### **REMARKS/ARGUMENTS**

Reconsideration of this application is requested. Claims 1 and 3-19 will be active in the application subsequent to entry of this Amendment.

#### **Discussion of Amendments to Claims**

Claim 1 has been amended in three important aspects. First, it includes the subject matter of claim 2 providing a total thickness of the coating of at most 100 micrometers. It also specifies that the thickness of each of the electrically conducting layers is from 10 to 200 nm. Basis for this appears in the description of the invention, for instance page 2, lines 29-30. In addition, claim 1 further specifies that the wavelength of the radiation to be emitted by the surface is in the range of 5,000 to 50,000 nm. Basis for this may be found in Figure 1 of the application as published, in particular the x-axis.

The importance of these changes to claim 1 will be apparent from the remarks that follow. Basis for the amendments will be clear from the above comments.

#### **Response to Prior Art-Based Rejections**

The rejection based on Boire et al only applied to previous claims 1, 3-6, 8-14 and 17-19. By having combined previous claims 1 and 2, this objection is now rendered moot.

The Official Action also includes a rejection based on Nelson in combination with Buhay et al. These documents do not make the present claims obvious for at least the following reasons.

Nelson describes an anti-reflection coating for the visible part of the spectrum. This follows for instance from Nelson, column 2, lines 2-6; column 3, lines 9-12; and Figures 2-4.

Buhay et al concerns a two-layer coating stack, comprising a functional coating and a protective coating (e.g. Buhay et al, page 6, paragraph 60 and Figure 3).

The present invention, on the other hand, relates to reflection of far infrared radiation or thermal emissivity (i.e. radiation having a wavelength between 5,000 and 50,000 nm) using an optical stack with at least three layers. This follows e.g. from the international publication, Figure 1 and page 5, lines 14-23. The inventors found that the currently claimed coating is able to considerably increase the thermal emissivity (radiation having a wavelength in the range of 5,000 to 50,000 nm) of a surface.

This increase in thermal emissivity was not to be expected in view of the cited prior art. The Examiner seems to suggest that the skilled man would simply adjust layer thicknesses of the

“interlayer” and the “additional layer”. However, the skilled man would be very cautious to adjust and not for the far infrared, as provided by the present invention layer thicknesses. Reflection and emission of radiation by an optical stack is very strongly dependent on the thickness of the layers. The thicknesses of the individual layers of the optical stacks have been carefully designed so as to provide the required interference patterns to reflect the desired radiation. Accordingly, the skilled man would not adjust the individual layer thicknesses taught by Nelson or Buhay et al, because this would have an immediate effect on the resulting emission and reflection properties of the optical stack.

Moreover, it is noted that Buhay et al explicitly teach away from the present invention by mentioning that increasing the emissivity of the functional coating improves the heating and cooling characteristics of the coated substrate during processing, but at the same time decreases the thermal energy reflecting capability of the functional coating, such as reflectance of electromagnetic energy in the range of 5,000 to 25,000 nm (Buhay et al, page 6, paragraph 61). This is further supported by Buhay et al, page 7, paragraph 68. The present invention, on the other hand, it directed to a coating that has high thermal emissivity.

An important consideration in determining obviousness is “teaching away” from the claimed invention by the prior art. *In re Dow Chemical Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988). A reference teaches away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. A reference will teach away if it suggests that the line of development flowing from the reference’s disclosure is unlikely to be productive of the result sought by the applicant. *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994); *see also KSR*, 127 S. Ct. at 1739–40 (explaining that when the prior art teaches away from a combination, that combination is more likely to be nonobvious).

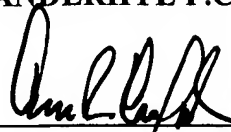
For the above reasons it is respectfully submitted that the amended claims of this application define inventive subject matter. Reconsideration and allowance are solicited. Should the examiner require further information, please contact the undersigned.

. . . , Petrus Antonius VAN NIJNATTEN  
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Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By: \_\_\_\_\_



Arthur R. Crawford

Reg. No. 25,327

ARC:eaw  
901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100